U.S. Department of Energy's Office of Science

EDUCATION PROGRAMS

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Components

- # Undergraduate
  - ## Historically Black Colleges and Universities Program (HBCU)

- # Graduate
  - ## Computational Science Graduate Fellowship Program (CSGF)

- # PhD
  - ## Early Career principal Investigator Program (ECPI)

Undergraduate Program HBCU

Advanced Scientific Computing Research Program

- ## Goal
  - Develop and expand research and educational relationships with historically black colleges and universities (HBCU) and other minority educational institutions

- ## Key Components
  - ORNL Research Alliance in Math and Science (RAMS)
  - Directly Funded Universities
    - (4 + 3 additional proposals under review)

- ## Funding History
  - Program has been growing
    - (FY04 $0.4M -> FY06 $1.6M**)**
    - FY 06 $1.6M ($1.3 directly funded universities and $0.3M ORNL – RAMS Program

Accomplishments and Future Plans for HBCU

Advanced Scientific Computing Research Program

- ## Accomplishments
  - Twenty one students from predominantly minority-serving institutions successfully completed an 11-week Summer 2005 RAMS internship
  - About 75% of recent RAMS participants from Fisk University, an HBCU in Nashville, Tennessee, went on to graduate school in computational sciences and engineering related fields

- ## Future Plans
  - Expand the number of directly funded HBCU institutions

Graduate Program CSGF

Advanced Scientific Computing Research Program

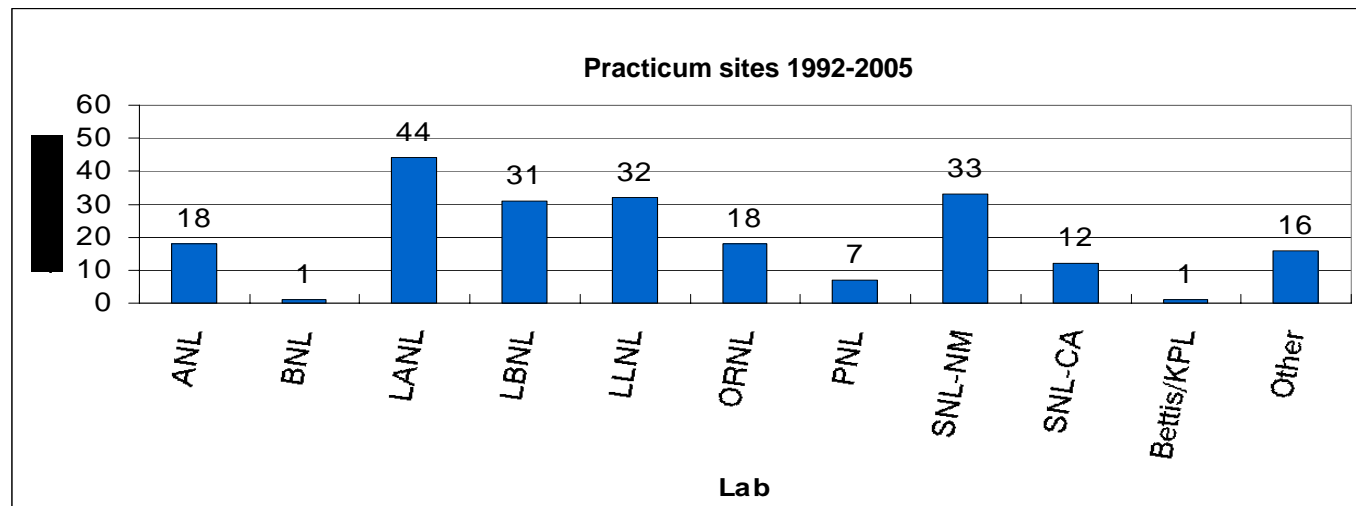- ## Goal
    - Ensure an adequate supply of appropriately trained scientists and engineers to carry out DOE's Mission in Computational Sciences

- ## History
    - 15 year successful track record
    - The fellowship provides support and guidance to some of the nation's best scientific graduate students, and these graduates now work in DOE laboratories, private industry and educational institutions

- ## Funding in FY 2006
    - $5.5M ($3.5M – ASCR; $2.0M – NNSA)
    - 15 Fellowships awarded per year (410 applications received in FY 06)

Graduate Program CSGF

Advanced Scientific Computing Research Program

- ## Includes Practicum

  - ### Differentiates this program from other fellowships

    – "The fellow made a number of contributions to the research program. Not only did she handle the design and implementation of the hybrid methodology, ***she also made key contributions to the basic algorithmic ideas that were central to the approach we used. I found her performance to be truly outstanding."*** *– FY 05 Advisor*

Practicum sites 1992-2005

Lab	Value
ANL	18
BNL	1
LANL	44
LBNL	31
LLNL	32
ORNL	18
PNL	7
SNL-NM	33
SNL-CA	12
Bettis/KPL	1
Other	16

Accomplishments - CSGF

Advanced Scientific Computing Research Program

- **Accomplishments**
  - The fellowship currently supports 64 students at 30 universities in 22 states
  - Nearly 225 students at more than 50 U.S. universities have trained as Fellows, and the demand is only growing
  - ASCAC notified Dr. Orbach that this program was a diamond
  - Recognized as successful by NSF's Division of Mathematics
  - Listed in National Research Council's 2000 report *Strengthening the Linkages Between the Sciences and Mathematical Sciences*

Future Plans
CSGF

- **Future Plans**

  - Fellowship Conference in June 20-22, 2006

  - External Program Review scheduled for June 2006

  - Send CSGF fellow to Lindau, Germany for the Nobel Winners lecture – June 2006

    - http://www.lindau-nobel.de

  - Increased funding requested in FY 2007 to support increased stipends and more students

PhD - ECPI

- ## Goal
  - Support research in applied mathematics, computer science, and high- performance networks performed by exceptionally talented scientists and engineers early in their careers

- ## History
  - This is the fifth year of the program.
  - Identifies exceptionally talented applied mathematicians, computer scientists, and high-performance networks researchers early in their careers and assist and facilitate the development of their research programs

- ## Funding
  - $2.6M in FY 2006
  - Average award $100K

PHD - ECPI

Advanced Scientific Computing Research Program

- **Applications Received**
  - FY02:   132
  - FY03:   61
  - FY04:   103
  - FY05:   83
  - FY06:   66

- **Accomplishments**

  - ASCR Commended By COV for using ECPI program to increase the pool of talented investigators in computational sciences

- **Future Plans**

  - External program review is scheduled for August 2006